Adequate Public Facilities Regulations: Analysis and Recommendations Rockville, Maryland

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APFO Recommendations from the Traffic & Transportation Division

Introduction

Currently, mobility throughout the City is limited due to traffic congestion generated by local and regional trips. Over the next twenty years, regional population and employment is projected to grow by 39-40%. Consequently, even if Rockville halted all future growth within its City limits, traffic congestion on City streets would still increase. Regional growth, combined with anticipated development within the City, will stress both existing and proposed infrastructure.

To complicate matters, Rockville's roadway system is essentially built out. Locations that currently experience the worst congestion levels generally would require multi-million dollar improvements to solve the problem. However, in less densely developed areas of the City – where traffic operates at acceptable levels — many small-scale intersection improvements are still possible.

Recommendation 1

To prepare for travel demand increases over the next 20 years, the City must be proactive in continuing to create a transportation network that aims to mitigate congestion through multi-modal enhancements and does not rely exclusively on auto-oriented travel. The City needs to ensure that its land use patterns, urban design, and transportation system provide residents with an environment in which goods and services are readily accessible to all users.

Worsening traffic congestion levels make it desirable for residents to find goods and services closer to where they live and work. Certain land use redevelopment is critical to provide residents the ability to travel shorter distances to reach goods and services. Thus, land use patterns should encourage development or expansion of activity centers in order to make such amenities convenient and accessible. Development in areas oriented towards travel by single occupant vehicles pose challenges in providing convenient, accessible, and adequate public facilities.

To encourage concentrated land-use and increased multi-modal travel, the Mayor and Council should establish transit-oriented and non transit-oriented areas in the City. LOS standards will be more stringent in non transit oriented areas as discussed in Recommendation 2.

Implementation:

Transportation congestion level of service (LOS) standards will be applied to all development in the City of Rockville.

Higher congestion levels will be acceptable in transit-oriented areas, which will be established by the Mayor and Council. These are areas of concentrated development where viable transportation alternatives to the automobile exist. They should include areas 7/10ths of a mile accessible walking distance from existing and programmed Metro stations and programmed transit stations on dedicated transit rights-of-way. In addition, these transit-oriented areas may include access roads to these transit-oriented areas.

Recommendation 2

In developing performance standards for an adequate transportation system, intersection congestion measures must be a top priority. However, due to the situation Rockville faces with regard to future regional growth and an already strained roadway system, traffic measures should not be the sole gauge, nor should roadway improvements be the sole solution. If traffic congestion is the only performance standard measured, the development of activity centers will not occur due to the influx of sub-regional through traffic on City streets. Growth in through traffic alone could stop development in the City's key activity centers. Performance standards and traffic mitigation improvements must be multi-modal to capture the essence of the problem in order to establish a comprehensive solution.

The urban design of City streets must continue to be retrofitted to (1) provide better mobility for pedestrians and bicyclists, and (2) improve accessibility to major transit hubs. Sidewalks and bicycle facilities must be safe, connect to activity centers, and be accessible to residents. These measures will make alternative modes of transportation competitive with the automobile in terms of accessibility, travel time, convenience and cost.

2a. Depending on whether a development occurs in a transit-oriented or non transit-oriented area, identify different congestion level thresholds that warrant mitigation. Non transit-oriented areas will have stricter congestion standards.

Implementation:

The level of service (LOS) specification for roads should encompass the following elements, subject to further revision to be consistent with the Comprehensive Transportation Review (CTR), which is the evolving replacement for the Standard Traffic Methodology (STM):

A. LOS criteria that supports minimizing congestion where possible as stated in the Master Plan goal to *enhance the mobility of people and goods*. A two-tier approach to the determination of the LOS threshold is recommended. The first level would be established on a City-wide LOS determination for each road classification in the City. The second level would supersede the first, based on delineation between transit-oriented areas and non transit-oriented areas.

In most cases, the City's current road classification takes land uses abutting the road into account; however, the current road classification criteria would need to be updated to fully implement this two-tier approach. A good model for the proposed road classification would be based on a merger of Denver's Street Functional Classification and Street "Typology" designations. Since the implementation of an expanded classification system would require a change in the City Code for Sec. 21-56 to Sec. 21-80, the initial LOS criteria for the APFO should be based on the existing classification and modified in tandem with new policy for road classification. The following are proposed LOS thresholds by road classification to be incorporated into the CTR:

- Any vehicular traffic increase that results in exceeding the following intersection level of service thresholds (except as noted below):

  - LOS C (i.e., volume/capacity (v/c) ratio less than 0.80) for Primary Residential – Class II (Minor Collector), Secondary Residential, Secondary Industrial, Other;

  - LOS D (i.e., v/c ratio less than 0.90) for Major Arterials (Except where two Major Arterials connect), Minor Arterials, Primary Residential – Class I (Major Collector), Primary Industrial;

  - LOS E (i.e., v/c ratio less than 1.0) for Business District roads and for locations where two Major Arterials intersect;

  - Limited Access (Freeway) LOS for the through lanes should not be considered. The LOS thresholds for the associated ramps would be determined based on the connecting road classification;

  - At intersections where two or more roads with different classifications meet, the LOS threshold will be established based on the less restrictive classification.

The second tier of this approach would require the establishment of specific areas wherein more vehicular traffic congestion would be permissible. The criteria and process to demarcate these areas would be established by the CTR; as discussed in Recommendation 1. Requirements would read:

- LOS E (i.e., v/c ratio less than 1.0) would be allowed in transit-oriented areas, as established by the Mayor and Council.

B. Special consideration should be given to locations at which the LOS for "background" traffic conditions exceeds APFO thresholds. Under these conditions, the developer would have to mitigate their impact without consideration to the threshold. Requirement would read:

- New developments shall mitigate their impact, defined as a v/c ratio increase of 0.01 or more, at intersections where the LOS for "background" traffic conditions exceeds acceptable thresholds.

C. Consideration must also be given to how vehicular traffic impacts other goals and measures outside of the scope of LOS thresholds. This requirement would address Master Plan goals that go beyond mere focus on traffic congestion (e.g., *Minimize Non-Local Traffic in Neighborhoods, Improve Vehicular Safety on City Streets*). These conditions would be similar to those stated under the current STM. Requirements under this basis could read:

   - Any condition that constitutes a significant and notable impact as stated in the CTR. Examples of such impacts include:

     - Any deterioration of one level of service (0.10 v/c) or greater.
     - Exceeding the City's criteria for traffic volumes on residential streets.
     - Any condition that contributes significantly toward the need for, or modification of, a traffic signal as established in the Manual on Uniform Traffic Control Devices or determined by the Director of Public Works or designee.
     - Any condition in which the capacity of a turning lane is exceeded as established in the Manual on Uniform Traffic Control Devices or determined by the Director of Public Works or designee.
     - Any condition contrary to principles of proper design and location for driveways, medians and median openings, service drives, and similar facilities.
     - Any condition creating or aggravating a safety hazard.

D. The Mayor and Council should also consider allowing vehicular traffic mitigation credit for improvements for alternative modes of transportation. This credit system would be implemented by the CTR and is discussed further below.

2b. As part of traffic mitigation agreements, when appropriate, replace intersection widening near major transit facilities or in walkable communities with ~~enhancements~~ facilities & programs that reduce single occupant vehicle use. Focus on urban design, system connectivity, transit shuttle services, and transit subsidies. This multi-modal mitigation will improve accessibility for the entire local transportation system, not just the new development.

Implementation:

To enhance multi-modal accessibility, the City may require one of the following:

- Implementation of physical modifications, where possible, to bring vehicular capacity to acceptable LOS.
- Where physical modifications are not desired by the City because of adverse impacts on other modes of transportation, a monetary contribution equivalent to the physical modification may be used towards multi-modal projects or programs in transit-oriented areas.
- In non transit-oriented areas where multi-modal transportation options are less prevalent, the contribution amount required may be twice the equivalent of the physical modification.
- A consideration to allow vehicular traffic mitigation credit for other modes of transportation improvements.

Recommendation 3

Creating viable transit, pedestrian, and bicycle options will be more likely in transit-oriented areas where urban design, mixed uses, transportation options, and parking costs promote such alternative modes of transportation. Replacing traffic improvements with multi-modal transportation improvements will have a greater return on investment in transit-oriented areas than in non transit-oriented development areas because competitive transportation options exist in transit-oriented areas.

When determining adequate public facilities in transit-oriented areas versus non transit-oriented areas, the replacement of traffic capacity with multi-modal facilities should not be credited equally. Allow more credit for multi-modal substitutions in transit-oriented areas than in non transit-oriented areas.

Implementation:

If desired LOS standards, as defined in the CTR, are not met, mitigation must be implemented to reduce congestion to an acceptable LOS, or the development in Rockville will be denied. Trip credits may be applied against trip generation for pedestrian, bike, transit, transportation demand management programs and other transportation improvements for proposed new developments in Rockville. Credit will be applied according to the type of program or improvement. Total amount of credit applied will depend on whether or not the development is in a transit-oriented area.

The City credit system will be based in part on the credit system adopted by Montgomery County for off-site sidewalks and bike paths, bus shelters, bike lockers and real-time

transit information. As data is collected, the credit system will be updated and expanded to be included as part of the CTR.

A developer may offset the impact of a development project and bring their impact to a level allowed under the APFO by constructing multi-modal improvements or facilities including; bike facilities, sidewalks, bus shelters, bike lockers and carpool spaces. The developer will be credited auto trips according to the table in the CTR for these non-roadway capacity improvements.

Recommendation 4

City Council members and staff have expressed concerns about the length of time that development approvals continue without periodic opportunities to reassess traffic impacts from the development. Currently, once a development project has been approved, it reserves traffic capacity for extended periods of time – in some cases indefinitely. These undeveloped projects are not required to update the traffic studies to ensure that at the time of occupancy the transportation system will be adequate to serve the development.

Establish a time limit on approved applications to ensure adequate transportation capacity. Ensure that time limits are established on undeveloped approvals and that transportation studies be updated after a specified period of time. Implementation for such limits is discussed in the Duncan Report under "Project and Capacity Schedules" (p. 10).

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facilities & programs

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Executive Summary

Completion of an Adequate Public Facilities Ordinance is one of the goals on the *Mayor and Council Strategic Plan for 2002-07.*

Overview

This study examines current regulations and policies in Rockville to determine the desired level of service of public systems to be used in a proposed Adequate Public Facilities (APF) ordinance.

Recommendations

The following are overall recommendations for the APF ordinance:

- The APF system should be integrated into the development review process in such a way that maintains available capacity in systems throughout the process.
- Reserved capacity should be tied firm schedule commitments by developers to ensure predictability in the pool of available capacity.
- Use "Service Commitments" to phase in the demand from already-approved but not built projects without reserving all available capacity for those projects.

Other issues

- An APF ordinance differs from Rockville's current system in that it sets absolute performance standards for public systems and then tests proposed developments against those standards.
- An APF ordinance essentially adds a timing dimension to local zoning, which could possibly allow more development than local systems can support.
- Level of service standards or their application may need to be adjusted for different locations or types of development, depending on the City's specific goals.

Transportation

- Delineate areas in the City that are priority growth areas and non-priority growth areas. The priority growth locations must possess present or future multi-modal accessibility, including a major transit hub;
- Depending on whether a development occurs in a priority or non-priority growth area, identify different congestion level thresholds that warrant mitigation. Non-priority areas will have stricter congestion standards.

- As part of traffic mitigation strategies, (through the Comprehensive Transportation Review) when appropriate, replace intersection widening near major transit facilities or in walkable communities with enhancements that reduce single occupant vehicle use. Focus on urban design, system connectivity, transit shuttle services, and subsidies. This multi-modal mitigation must improve accessibility for the local transportation system, not just the new development.
- When determining the adequacy of public facilities in activity centers versus traditional suburban-designed areas, the replacement of traffic capacity with multi-modal facilities should not be credited equally. Allow less credit for multi-modal substitutions in suburban-developed areas than in activity centers and priority growth areas.

See *Transportation*, page 16.

Schools

- The capacities determined annually by the Superintendent of Montgomery County Public Schools, as reported to the Board of Education, should be used as the capacity basis for the APF program;
- The City should follow the common practice of determining capacity based on a cluster of schools, using the clusters already established by the Montgomery County Public Schools;
- Capacity temporarily taken off-line for rehabilitation and remodeling in accordance with the Montgomery County Public Schools Capital Improvements Program should be considered available;
- Facilities shown on an adopted Capital Improvements Program with identified sources of funding and planned for completion within 5 years or less should be considered available;
- Schools should not be considered over-capacity unless projected demand will cause enrollment in a cluster to exceed 100% of the MCPS calculated capacity of the buildings in the cluster;
- Demand should be based on actual student census in the most recent complete academic year, adjusted for the following: demographic changes, changes in district boundaries and other changes anticipated by planners with Montgomery County Public Schools; additional demand from approved development; additional demand from the specific development being considered for approval. It may be necessary to require that developers obtain current certification of school capacities for individual clusters, because the annual figures reported to the Board of Education can rapidly be outdated.

See *Schools*, page 27.

Fire Protection

- Consider allowing certain higher-risk uses only where a full response from 3 stations within 10 minutes is possible. Such uses would include: schools; hospitals; nursing homes; places of assembly seating more than 500 [or another number]; buildings taller than three (or pick another number) stories. Clearly the public risk issues are much greater in dealing with such uses and there is thus a logical basis to require that an optimal fire or EMS response be available to any such use that is established in the future.

See *Fire Protection*, page 38.

Police Protection

- Level of Service: Do not adopt.

See *Police Protection*, page 43.

Water Supply

- The APF ordinance should contain an absolute prohibition on the approval of any development which would create total water demand in the City that would exceed available supply less a reasonable reserve for fire-flow. This would basically be a backup standard, as it seems unlikely that any development will actually create so much demand that the City's demand will approach available supply.
- The City may wish to consider including a limitation that would prohibit approval of a development for which a minimum (specified) fire-flow will not be available from hydrants located within ___ feet of _____ within the development. Such a standard might be applied to all developments or only to institutional and other uses that place large numbers of people in a single building. But see discussion below.

See *Water Supply*, page 45.

Sewer Service

- The APF ordinance should contain an absolute prohibition on the approval of any development which would cause the City to exceed the capacity available to it at the Blue Plains Treatment Plant or other facilities provided by WSSC.
- The APF ordinance should prohibit approval of a development for which transmission capacity in the WSSC system to Blue Plains or another treatment facility will not be available concurrently with the anticipated demand.

See *Sewer Service*, page 48.

Introduction and Overview

Overview

Adequate public facilities (APF) or concurrency regulations focus on the relationship between public investments in infrastructure and new development that will depend on that infrastructure. Concurrency is currently state law in Florida. Most local governments require that there be adequate sewer or water capacity before a particular building is connected to the system – an APF system goes a step beyond that, trying to shape the region and base development approvals on the current or near-future availability of capacity to serve them.

A local government with adequate public facilities controls requires that adequate basic services and facilities be provided at the same time as, or concurrent with, any new development. While land development regulations have historically been used as means of ensuring that residents and end users of a development project can be adequately served by community facilities, adequate public facilities standards go further, by ensuring that new development will not cause unacceptable reductions in service for existing area residents.

Completion of an Adequate Public Facilities Ordinance is one of the goals on the *Mayor and Council Strategic Plan for 2002-07*.

This Study

The most difficult step in establishing a program of "adequate" public facilities is defining what "adequate" means. Although a sewer pipe is full when it is full– and its capacity is calculable – the capacities of roads, schools, parks and other facilities are in part a matter of public policy. Public policy in most communities is to avoid allowing roads to be completely filled with congestion or allowing every square foot in a school building to be consumed with desks, to the exclusions of libraries, performance spaces and other supportive systems. A policy regarding the desired level of performance of a public system is typically called a "Level of Service," or "LOS" policy.

This study examines current regulations and policies in Rockville as a context for establishing LOS benchmarks to be used in a proposed Adequate Public Facilities ordinance. The study has been assembled by Duncan Associates, a consulting firm, relying on a substantial amount of data and analysis from the City of Rockville, the Montgomery County Public Schools and the Montgomery County Fire Department.

LOS, Adequacy and Accounting

Basic Principles

Both the capacity of public facilities and the demands on them are dynamic concepts. New buildings are occupied every year in Rockville, but there are also significant additions to major public facilities every year. Simply taking a measurement of conditions on a particular day does not provide an accurate picture of the adequacy of public facilities, because many public improvements and private buildings are under construction but not in use – and a number of other public improvements and private

developments have already been approved and will come on-line at some point. In addition, the conditions may vary substantially from day to day.

Montgomery County has one of the most sophisticated systems in the nation for accounting for such issues. That system can provide a good model– and can actually offer direct input for – the City's own model. Basic elements are:

1. An inventory of capacities of major systems;
2. Capacity data for improvements included in the current capital budgets and capital improvement programs;
3. Policies on the extent to which unbuilt but planned capacity in facilities should be included in capacities (this draft suggests generally that planned facilities contained in the capital budget should be included in capacity at the time that they are scheduled to come on-line but that other planned facilities should be ignored unless built by the applicant as a form of mitigation);
4. Data on "approved, not built" or "pipeline" (Montgomery County term) projects and the demands that they will place on facilities;
5. Ideally (and this element is only partly available in Rockville) a schedule for the demands from "pipeline" projects;
6. A system for approving new projects that includes:
   a. Detailed demand analysis;
   b. A system for reserving capacity at some point in the approval process;
   c. A requirement for binding project schedules in all future project approvals;
   d. An accounting system that will revert capacity into the pool when it is not used as scheduled and that will identify other "reserved" capacity as "used" when specific actions are taken (our proposal is to mark capacity as "used" when a building permit is issued).

Items 1 and 2 already exist in Rockville, as do the basic elements necessary to generate Element 3. At least two major "approved, not-built" projects are far behind schedule, while others are building well ahead of schedule. Element 4 can be created from a review and assembly of existing data, but establishing a reliable basis for Element 5 may require new regulations affecting such pipeline projects. All parts of Element 6 can be incorporated into a new APF ordinance and implementation system.

Demand Calculation

Demand calculation for APF programs and for impact fee programs are generally based on projected human use, rather than on factors related to the building. Typical factors used in computing demand are:

Facility	Factors	Source and Computation
Schools	Occupancy by school-age children	Most recent Census, adjusted by any additional information generated by school officials; different

Facility	Factors	Source and Computation
		factors for different unit types
Traffic	Trip generation	ITE Trip Generation Manual or project-specific impact studies; Montgomery County Trip Generation where applicable
Transit	Varies	Often figured as a portion of trip generation; should be factored based on distance from route, with greater factor for fixed-rail; Census data is also used
Pedestrian and Bicycle	No standard	May be figured as a portion of trip generation
Water: Residential	Occupancy	Most recent Census and data from Public Works; may vary by unit type, size or by Census-determined occupancy; Inspection Services has additional data that can be used;
Sewer: Residential	Occupancy	Computed based on winter water-use, obtained from Public Works (sewage results only from in-house water use, and summer water use figures typically include irrigation, car-washing and other outside uses that do not generate sewage); Inspection Services has additional data that can be used;
Water: Nonresidential	Use specific	If not used in process, can be calculated by occupant load for restroom use; if water used in manufacturing or other process, should develop local figures
Sewer: Nonresidential	Use specific	See water: nonresidential
Fire:	Response distance or time; water availability	May be mapped, with map updated periodically
Police	Number of residents	Most formulas for measuring adequacy of police protection are based on the number of officers per 1,000 residents

Reserving Capacity for New Projects

The APF ordinance will test the capacity of public systems based on data at a particular point in time. As new projects come into the system, as other projects are completed, and as some projects may be abandoned, the net available capacities in systems will change. Thus, it is critical that the APF system be integrated into the development review process in a way that commits both the developer and the City to maintaining the availability of the capacity, provided that it is used on schedule. Such a system might have four major steps:

- At the concept plan approval stage (or at the stage of rezoning, when that occurs), there should be a general capacity review and an initial determination of the adequacy of public facilities. If facilities are found not to be adequate, the proposed project should be denied. If facilities are found to be adequate, or adequate subject to specified conditions, the

project may be approved, **but** capacity will not be reserved at this stage. Alternatively, the developer might be given the option to reserve capacity at this stage through the payment of a significant deposit or fee, with a time limit of one year to obtain next-stage approval and maintain the reservation.

- At the preliminary plan, detailed application, or use permit review stage, there should be a detailed capacity review (similar to the current STM methodology but dealing with multiple facilities). If facilities are found not to be adequate, the proposed project should be denied. If facilities are found to be adequate, or adequate subject to specified conditions, the project may be approved and, after the developer provides security for the completion of required improvements and makes a non-refundable deposit toward impact fees or exactions due, capacity will be reserved, subject to a very detailed schedule for use of the capacity.
- The final plat stage should simply be a check-off against the prior approvals; capacity should already be reserved. Note that if the developer fails to meet the schedule for use of reserved capacity by the timely filing of conforming plats, that capacity will be put back into the pool.
- The building permit stage should be the final check-off against the prior approvals, and capacity should be formally moved from the "reserved" to the "used" category at the time of issuance of the building permit.

Orange County, Florida, has a time-tested system of tying capacity commitments to project schedules. It follows basically the model outlined here, although it issues a non-binding capacity letter after the initial stage review.

Project and Capacity Schedules

A corollary of the system for reserving capacity for proposed projects must be a system of tying those reservations to firm schedule commitments by developers. The effect of failure by a developer to meet a schedule should be that the reserved but unused capacity reverts into the available capacity pool and the developer must reapply for that capacity before proceeding with the project or with the portions of the project that have not been completed.

The important aspect of the schedule is its existence, not its length. What the City is seeking is predictability, not an unreasonable commitment from a developer. It is also critical, however, that the capacity allocations expire automatically and that the Mayor and Council not be put in the position of having to take affirmative action to rescind capacity allocations.

Developers are by trade optimistic and thus often set very aggressive schedules. Thus, it is often possible to accept something close to the schedule that the developer proposes and even to allow some flexibility – perhaps as much as a year – in completing projects by the committed time. An alternative approach is to allow a developer to appeal for an extension; we usually recommend limiting a particular project to one extension of a specified period.

Note that the concept of "Service Commitments (SC)," outlined in the next sub-section, can be a useful accounting mechanism for dealing with projects that have been fully approved or even partly built but had their capacities lost due to a failure to keep to the planned schedule. There can be legal, political and practical problems with ignoring the existing project approval and asking that the developer start from scratch; through the use of the Service Commitment concept, the City can honor the approved project but ensure that no part of it is built at a time when capacity is not available to serve it.

Approved, Not-Built Projects

Dealing with the "approved, not-built" projects can be problematic. Westminster, Colorado, faced this problem in 1978 when it first implemented its growth management system, a system that is still in use in a form very similar to the original. Because there was substantially more demand in "approved, not-built" projects than the City could serve at the time of adoption of the program, the City created a concept of "Service Commitments" as an additional stage in the process of land development regulation. Ordinances were revised to provide that no subdivision approval or building permit would be issued unless the applicant held adequate "Service Commitments" to support the project or construction. Although the program ultimately became an APF program implemented at the project-review stage, the use of Service Commitments (SC) provided a way to phase in the demand from already approved projects without reserving all available capacity for those projects. Westminster used a single-family dwelling equivalent as the basis for one Service Commitment and computed requirements for other types of development as functions of one SC.

A similar system would address a number of the concerns in Rockville today. Much of the available capacity in the City would be unavailable for new development if adequate capacity were reserved in all systems for all potential development that can occur in approved, not-built projects. Although the City clearly must reserve some capacity for those projects, because some are under active development, it may not make sense to reserve full capacity for a large project that is already years behind its original schedule. Rockville could, subject to review with the Legal Department, consider implementing this concept in two different ways (and, perhaps, others):

1. Establish the concept of "Service Commitments" as a requirement for all future buildings in the City that do not currently have a building permit; then develop an allocation system for the Service Commitments, setting relative priorities and formulas for dealing with older not-built projects, projects currently under construction, small infill development, and future development.

2. Provide for the allocation of facilities capacity in accordance with project-specific schedules; establish a base-line allocation for already approved projects based on building activity in the last 2, 3, or 5 years; then establish a system through which approved projects with an inadequate allocation can apply for approval of a project-specific schedule.

Relationship to Standard Traffic Methodology

In Rockville, as in most rapidly growing communities, much of the discussion on the adequacy of public facilities revolves around traffic congestion. Rockville currently uses its "Standard Traffic Methodology" (STM) to address the relationship between public facilities and growth. As we understand the system in operation, the result of processing through STM in most cases is approval of a project, subject to the condition that the developer pay for certain improvements, designed to mitigate or offset the impact of the development on the community.

The focus of the STM is on mitigation of impacts through requiring that developers provide improvements. Because of that characteristic, it resembles an impact-based exaction program at least as much as it resembles a regulatory APF program. An exaction is something that is "exacted" from a developer as a cost of obtaining development approval. Typical exactions consist of public facilities improvements or cash to be used toward the completion of such improvements. An "impact fee," impact tax, and fee-in-lieu of dedication are forms of exaction. Some communities have shifted to a system of exactions based primarily on impact fees, in which the exaction for a particular development is calculated from a formula. Other communities negotiate exactions on a case-by-case basis with each developer. The STM appears to place Rockville in a middle ground, using a rational formula (similar to – but far more complex than – an impact fee) to determine the amount of an exaction but essentially negotiating the exaction for each development separately, based on the projected impact of the development.

An Adequate Public Facilities (APF) ordinance differs from an exaction in that it sets some absolute performance standards for public systems and then tests each proposed development against those standards. While the underlying assumption with the STM is that it is a method through which the City and developer determine what the developer will pay to play the development game in Rockville, with an APF system the underlying assumption is that some developments may not be approved at all or may be approved only with a substantial reduction in scope or scale or with a substantial revision to the proposed schedule.

Montgomery County's Annual Growth Policy represents essentially a blended approach, establishing LOS standards for policy under an APF system that includes impact taxes. In addition, the AGP includes other options, such as a "Pay and Go" fee schedule that appears to allow many developers to proceed regardless of whether the specified LOS may be exceeded.

An APF ordinance will **not** replace the need for exactions, whether accomplished through something like the STM, through impact fees or through some other method. It will, however, split the review of the impacts on public facilities into two parts:

Part 1: APF/LOS determination, results in a "Yes," "No," or "Conditionally yes, subject to the developer providing specified improvements to maintain LOS" (and this requirement will be separate from Part 2);

Part 2: Impact fee or other exaction determination.

One issue that arises with such a system is the extent to which a developer should receive credit toward the impact fee or exaction for an improvement required as a

condition of project approval. Montgomery County's impact tax does allow for a credit when an improvement meets certain criteria.

The important concept to understand at this stage is that the APF ordinance would add a new tool to the City's program of development regulation, but it would not entirely replace the existing STM and similar negotiations for other public improvements; the City will still need a formal system of exactions, one that is complementary to and coordinated with the APF ordinance. The Comprehensive Transportation Review, which will update and replace the STM, will provide such a system for a multi-modal transportation system.

Other Overarching Issues

"Phasing In" the Program

In response to an early, staff-review, draft of this report, some readers asked it if would be possible to "phase in" an APF program. The answer is "Yes." Part of the phasing issue has to do with the challenge posed by the demand overhang created by several large, already approved projects; that issue is addressed in the previous sub-section (Project and Capacity Schedules, p. 10).

The other issue, however, relates to meeting the standards. Establishing "ideal" standards and imposing them later in 2003 could result in a near shutdown of some (or perhaps most) types of construction and development in Rockville. Many roads are already functioning below desired standards. According to Montgomery County, the City already has inadequate road capacity to serve its existing housing units, and the addition of units from approved, or "pipeline," projects will make that worse (AGP 2002, page 47, Table 1); although the City has net capacity available to absorb additional jobs, according to County figures, pipeline projects will use 5 times the available capacity in Rockville (AGP 2002, page 48, Table 2). However, Rockville Planning and Transportation staff members are working with staff at the Montgomery County Planning Board to ensure that the capacity from previously built road improvements is included in the calculation of gross staging ceilings; it appears that the existing deficits will be substantially reduced when those improvements are considered.

Relationship to Zoning

Under an APF program, a local government may deny approval to a proposed project that is within the density and other limits specified by zoning. That fact raises questions about whether the zoning is somehow defective and whether the owner may have legal "rights" to develop to the maximum theoretical zoning capacity. This brief section has been added in response to a specific request to address this issue.

Most zoning in a developed area is based essentially on a build-out scenario, without regard to when a particular piece of property will develop. The APF ordinance, like other types of growth management programs, adds the dimension of **timing** to the project review. The fact that it may, someday, theoretically be possible to develop a property at 25 units per acre does not necessarily mean that there is currently adequate capacity in the sewer, water, road, school, and other systems to absorb

those units in the next one, two or five years. A developer always has the choice of waiting until a later date to develop. In some cases, a developer may have waited too long; it is possible that there was capacity to allow full development of the property to its zoning capacity some years ago but that capacity has now been used for other projects both inside and outside the City.

It is possible that the cumulative effect of zoning in Rockville (as in most cities) may appear to allow more total development than the City can possibly handle under any reasonable set of projections. Such circumstances may suggest the need to revise the zoning and reduce the allowable densities. The City may decide to undertake such an effort through its on-going efforts to update its comprehensive plan. There are some obstacles to implementing a generalized down-zoning, however. The principal reason for not undertaking a major downzoning is that it will almost certainly lead to litigation – and much of that litigation will be over theoretical developments that may never happen.

Developers typically realize that, at higher densities or intensities, most projects are limited by factors other than the maximum density or floor-area ratio established in the zoning ordinance. Requirements for on-site parking often effectively limit achievable net density. Setbacks, natural constraints on a site, building height limits and other factors may also limit the buildable density. Further, the market does not always justify the highest possible density. Thus, it will not come as a great surprise to developers that they may not be able to achieve the maximum theoretical density.

Further, to the extent that the City were to try to adjust zoning downward, it would do so based on demand projections computed from current data. That data may change. In the last 30 years, household occupancy has dropped substantially – meaning that it takes more dwelling units to house the same number of people. At the same time, the trip generation per person has increased. The future may see further changes in unit occupancy. A major change in the oil supply and related prices could have a dramatic effect on modal split. As all new dwelling units are built with sprinkler systems, fire response time may become somewhat less critical.

In sum:

- Zoning is essentially a static model for future land use;
- APF regulations deal with the dynamic relationship that results from the interaction of new development and public facilities. The two are thus related but not necessarily correlated;
- Updating the zoning ordinance would improve its relationship to the current state of capacities and demands for public facilities, but zoning would remain a static system and the relationship would be unlikely to hold over time. In other words, in ten years it might appear necessary to make another round of zoning adjustments, based on new capacity and demand information;
- Thus, the use of APF regulations as a supplemental tool represents the "best practice" approach to trying to respond to the inadequacies of zoning as a limit on the demand on public facilities created by new development.

Relationship to Other Goals

Woven throughout this report are references to the inherent conflicts faced by the City in trying to ensure "mobility" (which is usually defined as efficiency of auto movements) at the same time that it tries to convert more people from riding in cars to walking, riding bikes or riding on trains or buses. To the extent that the City maintains excellent mobility, it also facilitates and probably encourages automobile use. Rockville has acknowledged the complexity of this policy in adopting this policy in its comprehensive plan:

> "Minimize congestion **where appropriate**" (Comprehensive Plan, Oct., p. 4-18; emphasis added).

Further, maintaining auto mobility at a high Level of Service would require major expansions of major roads in Rockville. The costs of widening major roads surrounded by the kind of intense land development that exists in Rockville would be substantial. Perhaps more importantly, widening some roads beyond their current profiles would make them so hostile to pedestrians and bicyclists that the design could further discourage use of those modes of travel. Further contributing to the policy conflicts is the fact that the very success of a downtown area – like the Town Center – implies significant traffic congestion at times, just as the stadium parking lot of a successful football team will be jammed. Finally, many transit users in a suburban community like Rockville will get to transit by auto, thus contributing to significant traffic congestion near the station while helping to reduce traffic loads between there and the person's destination.

For all of those reasons, it will be very difficult to adopt absolute LOS standards for all transportation modes for the entire City. The LOS standards – or the methods through which they are applied – must be adjusted for specific geographic locations and/or specific types of development to reflect other City policies regarding the locations and intensities of particular types of development.

Next Steps

This document is intended to be used as a policy memo to guide the Mayor and Council in deliberations about the adoption of LOS standards for a new Adequate Public Facilities ordinance.

Transportation

Current Regulations

One of the approval criteria for a subdivision in Rockville is, "A preliminary plan shall be approved if the Planning Commission finds that the proposed subdivision will not: ... overburden existing public services, including but not limited to water, sanitary sewer, public roads, storm drainage and other public improvements." Rockville Code Sec. 25-727(e)

There is similar language governing:

- granting of special exceptions by the Board of Zoning Appeals (Rockville Code Sec. 25-338(2)(b);
- approval of "exploratory application" for planned residential development by the Mayor and Council (Rockville Code Sec. 25-562(5);
- issuance of use permits in the Rockville Pike Corridor Area (Rockville Code Sec. 25-731.10(1)(c);
- approval of "exploratory application" for townhouse development by the Mayor and Council (Rockville Code Sec. 25-625(5);
- approval of a concept plan for comprehensive planned development (Rockville Code Sec. 25-655(5);
- approval by Mayor and Council of a "Preliminary Development Plan Application for development in accordance with the I-3 Optional Method of Development" (Rockville Code Sec. 25-670(4));
- approval of a use permit for development in the Town Center Planning Area (Rockville Code Sec. 25-681(a)(1)c.);
- use of annexed property in accordance with county zoning standards in effect at the time of initial use (Rockville Code Sec. 25-17(a)(2));

Submission of a traffic analysis in accordance with the Standard Traffic Methodology and "mitigation of those traffic impacts which result in unsatisfactory levels of service as defined by the Standard Traffic Methodology" are required for:

- development of multi-family units in the O-1 Zone under the "optional development method" (Rockville Code Sec. 25-326(a)(8);
- any development under the "optional development method" in the RPC Zone, if the development will generate more than 100 vehicular trips "in any peak hour period" (Rockville Code Sec. 25-710.27(4);
- any development under the "optional method of development" in the I-3 Zone (Rockville Code Sec. 25-6667 (1);
- any development under the "optional method of development" in the TCM-1 or TCM-2 Zones (Rockville Code Sec. 25-682(2));

The following language appears in the section of the code regulating site development standards for retail stores (including stores commonly called "big box" stores) in the C-2 and the RPC Zones (Rockville Code Sec. 25-332):

> *Traffic impacts.* The applicant shall have a traffic impact study prepared according to the Standard Traffic Methodology. In addition to the general standards of the methodology, the traffic impact study shall include weekend traffic generation and impact analysis. The traffic impact study shall also study intersections within an area designated by the Chief Transportation Engineer to take into account the regional traffic draw of a large-scale retail establishment. Rockville Code Sec. 25-332(b)(2)i.

Requirements for a concept plan for a Comprehensive Planned Development include:

> [A]ll applications must contain a traffic impact analysis, and a sight impact analysis; except where the Plan provides for a development staging program based upon a consideration of traffic impact. Rockville Code Sec. 25-651.

The following language controls the issuance of a special exception for "personal living quarters":

> That adequate on-site parking is available so the facility will not overburden the existing neighborhood. Rockville Code Sec. 25-365.1(2).

The Special Exception criteria for the approval of Eleemosynary and Philanthropic Institutions in some residential areas includes this general language:

> The additional required finding is that the proposed use will not constitute a nuisance because of noise, traffic, number of people or type of physical activity. Rockville Code Sec. 25-357(b).

Adopted Policies Related to Adequacy and LOS

In Development Regulations

Current regulations rely on the Standard Transportation Methodology, a process which is intended to result in requiring that a developer provide marginal improvements necessary to maintain existing Levels of Service after the proposed development is completed.

STM specifies a minimum LOS of D/E (90% of capacity) in commercial areas and LOS of C/D (80% of capacity) in other areas of the city, except residential streets (STM, p. 8).

Other

Objective 2 under Goal 1 (Enhance mobility of people and goods) of the Transportation chapter (4) of the Comprehensive Plan is to "Minimize congestion where appropriate" (Comprehensive Plan, Oct. 2002, p. 4-18).

Objective 4 under the same goal is to "Construct multi-modal transportation improvements to support the impacts resulting from land development (Adequate Public Facilities)" (Comprehensive Plan, Oct. 2002, p. 4-21).

The new Comprehensive Plan, Transportation chapter (Ch. 4, Oct. 2002) includes a Goal 2:

Promote a transportation system that is multi-modal, accessible, and friendly to all users.

Objectives under that goal include:

Objective 1: Improve pedestrian connections from households to activity centers;

Objective 2: Improve bicycle connections from households to activity centers;

Objective 3: Increase transit use by residents and employers;

Objective 4: Increase carpool and vanpool use; and

Objective 5: Ensure multi-modal access to new developments.

The Town Center Master Plan (2001, p. 49) includes policies relevant to this study under the heading "Transit/Metro Station Policies":

- Developments at the station site should include mixed uses, typically with retail on first floor and residential or offices above.
- Station development should include a mix of uses that provide for essential daily needs...
- The overall density should be highest in the immediate area around the transit stop and become less dense towards the edges of the neighborhood....
- Pedestrian accessibility should be emphasized, and adequate bus, bicycle and auto access should be accommodated.

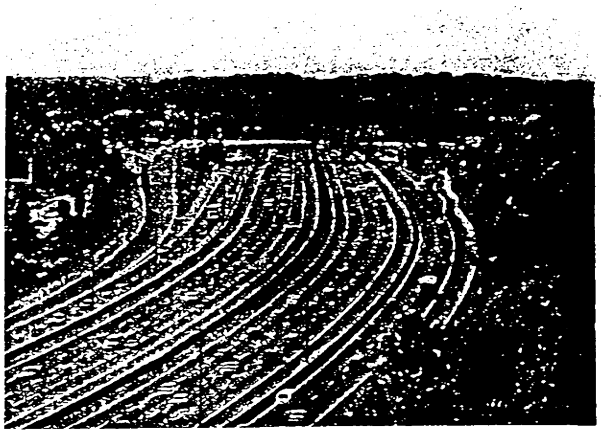
Recommendations: Transportation Systems

To implement APF regulations for a multi-modal transportation system, consistent with the City's adopted plans and policies, the City should seriously consider:

- Delineate areas in the City that are priority growth areas and non-priority growth areas. The priority growth locations must possess present or future multi-modal accessibility, including a major transit hub;
- Depending on whether a development occurs in a priority or non-priority growth area, identify different congestion level thresholds that warrant mitigation. Non-priority areas will have stricter congestion standards.
- As part of traffic mitigation strategies, (through the Comprehensive Transportation Review) when appropriate, replace intersection widening near major transit facilities or in walkable communities with enhancements that reduce single occupant vehicle use. Focus on urban design, system connectivity, transit shuttle services, and subsidies. This multi-modal mitigation must improve accessibility for the local transportation system, not just the new development.
- When determining the adequacy of public facilities in activity centers versus traditional suburban-designed areas, the replacement of traffic capacity with multi-modal facilities should not be credited equally. Allow

less credit for multi-modal substitutions in suburban-developed areas than in activity centers and priority growth areas.

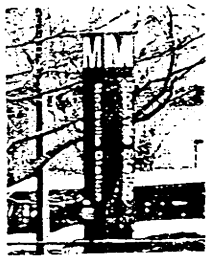
Regulatory Implementation



The APF review for roadways must be implemented with the new Comprehensive Transportation Review, which is also used to identify improvements to be required as a condition of development approval. The existing Standard Transportation Methodology is designed to deal with both capacity and demand factors

Remaining Issues

One major issue that the Mayor and Council may want to discuss is whether to consider LOS on I-270 as one of the factors used in determining whether new development should be allowed. Chapter 4 (Transportation) of the Comprehensive Plan does not include I-270 in most of its performance analysis and statements of goals and objectives. A large part of the traffic on I-270 is pass-through traffic, generally beyond the control of the City. There are thus many good reasons NOT to include I-270 in the performance analysis of local road systems used to evaluate proposed developments. Mayor and Council will undoubtedly want to review the issue, however.



Regional studies indicate that Metro will be significantly beyond its design capacity, at least during peak hours, within the near future. Only a portion of the projected increase in demand can be resolved by adding more trains with reduced headways. The City must make a policy decision about the extent to which it will consider actual capacity of Metro as a factor in determining alternative accessibility to particular sites; current models used by the City disregard actual Metro capacity and simply consider accessibility of a Metro station.

Comments

> ***Note*** *that the following comments represent a blending of comments from the consultant and from the City's Transportation Division; the comments are philosophically consistent and there is thus no attempt to identify which specific words came from which source.*

Currently, mobility throughout the City is limited due to traffic congestion generated by local and regional trips. Over the next twenty years, the regional population and employment is projected to grow by 39-40%. Even if Rockville stopped all future growth within its city limits, traffic congestion on City streets would increase. Regional growth, combined with anticipated development within the city will stress the existing and proposed infrastructure.

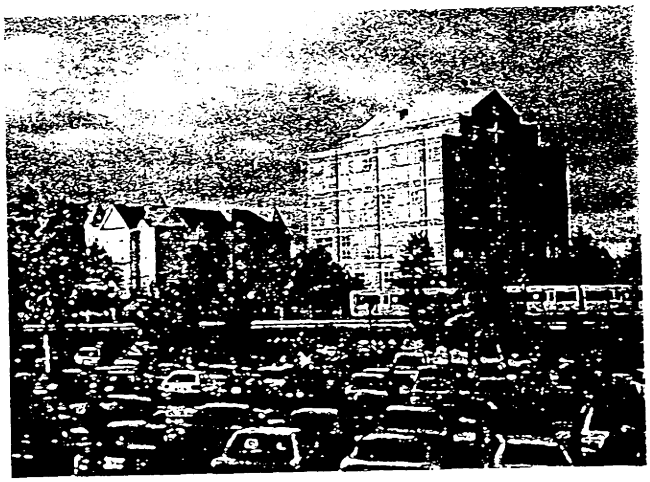
To complicate matters, Rockville's roadway system is essentially built out. Locations that currently contain the worst congestion levels generally require multi-million dollar

improvements to solve the congestion. Alternatively, these areas will require an increased reliance on non-vehicular improvements to increase the capacity of a multi-modal transportation system. However in the less densely developed areas of the City – where traffic operates at acceptable levels - many small-scale intersection improvements can still occur.

To prepare for these travel demand increases over the next 20 years, the City must be proactive in continuing to create an environment that does not rely exclusively on the automobile for travel. To address this critical issue, the City needs to ensure that the land use patterns, urban design, and transportation system provide its residents with an environment in which goods and services are accessible.

Because of the worsening traffic congestion levels, residents will need to be able to find goods and services closer to where they live and work. Land use patterns should reflect activity centers to provide such amenities. Certain land use redevelopment is critical to provide residents opportunities to travel shorter distances to find goods and services. However, development in areas oriented towards single occupant vehicle travel pose challenges in providing adequate public facilities.

The City has what amount to divergent if not conflicting goals when dealing with traffic congestion. Clearly city officials want to minimize inconvenience for residents, but the emphasis of the new Comprehensive Plan, on recent implementation of the Standard Transportation Methodology, and of the STM replacement, the CTR, is on addressing congestion issues through mobility alternatives other than street improvements. The explicit reason for the shift is the recognition that further widening of major streets in Rockville will make them increasingly hostile to pedestrians and bicyclists – thus nominally helping the goal of auto mobility but hurting the goal of pedestrian and bicycle accessibility. An implicit reason for the policy shift appears to be a recognition that congestion itself is a form of Transportation Demand Management. Montgomery County has long allowed a reduced LOS on streets near transit stations, recognizing both the trip-generation and trip-attraction effects of the stations AND the fact that someone stuck in traffic near a station may decide to hop on the train.



In developing performance standards for an adequate transportation system, intersection congestion measures must be at the top of the list. However, due to the issues listed above, it should not be the sole measure, nor should roadway improvements be the sole solution. Performance measures and traffic mitigation improvements must be multi-modal to capture the essence of the problem and solution. If traffic congestion is the only performance measure, the development of activity centers will not occur due to the influx of sub-regional thru traffic using City

streets. The growth in thru traffic alone could stop development in the City's key activity centers.

The urban design of city streets must continue to be retrofitted to (1) provide better mobility for pedestrians and bicyclists, and (2) improve accessibility to major transit hubs. Sidewalks and bicycle facilities must be safe, connect to activity centers, and be accessible to residents. The transportation system as a whole will need to be improved so that all modes of transportation are accessible and competitive with the automobile with respect to travel time, convenience, and cost. Recent project developers have been encouraged to use the cost-equivalent of a turn lane or other road-widening project justified by the STM to make improvements to pedestrian and other systems. That approach appears to be consistent with a synthesis of the City's goals, but it illustrates the difficulty in implementing an absolute LOS standard for streets and roads – because the City has been approving projects that, according to the City's own STM model, may cause the automobile LOS to fall below accepted standards or below current levels of operation. Thus, an APF ordinance establishing a rigid LOS for streets and roads would have required denial of some projects that the City has approved – in part because those projects were willing to invest in alternative modes of mobility.

Transportation planners with the City are now able to model and map accessibility by fixed-rail transit, bus, pedestrian, and bicycle for any part of the City. This allows the implementation of LOS standards for these facilities.

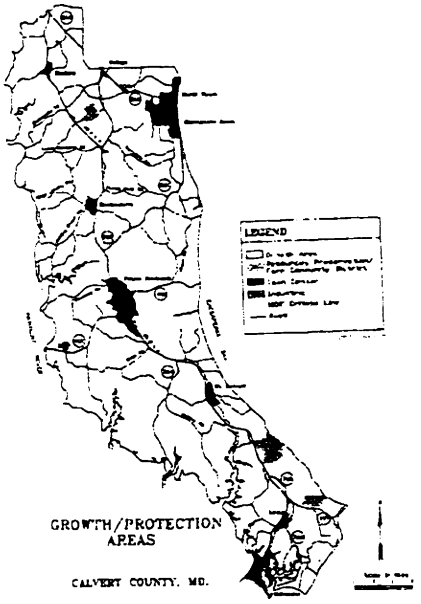
Creating viable transit, walk, and bicycle options will be more likely in activity centers, where urban design, mixed uses, and parking costs promote such alternative modes of transportation. Replacing traffic improvements with multi-modal improvements will have a greater return on investment in activity centers than in traditional suburban development areas because competitive transportation options exist in the activity centers. An adopted APF ordinance must find some way of incorporating a balanced approach to this issue.

References/Examples: Streets and Highways

<table>
<tr><th>Location</th><th>Source</th><th>Standard</th></tr>
<tr><td>Tallahassee, FL</td><td>http://talgov.com/citytlh/growth/manual/service.htm</td><td>LOS standards divided by location:
4.1.0 Arterial and Collector Roads
4.1.1 Urban Service Area
(a) North of U.S. 90
LOS D during the p.m. peak hour in the peak direction, except as noted below.
(b) South of U.S. 90
LOS D on Interstate, limited access parkways, and principle arterials during the p.m. peak hour in the peak direction and LOS E on minor arterials, major collectors and minor collectors, during the p.m. peak hour and in the peak direction except as noted below.
4.1.2 Rural
LOS C during the p.m. peak hour in the peak direction.</td></tr>
<tr><td>Placer County, CA /Carnelian Bay Community Plan</td><td>http://www.placer.ca.gov/planning/cbcp/01intro.htm</td><td>"Hours per day" variable in Roads LOS standards:
a. Policy: The level of service on major roadways (i.e. arterial and collector routes) shall be LOS D, and signalized intersections shall be at LOS D (Level of Service E may be acceptable during peak periods, not to exceed four hours per day).
Same policy also found at Tahoe Regional Planning Agency site:
www.trpa.org/goals/trans.pdf</td></tr>
<tr><td>Concord, NC</td><td>http://www.ci.concord.nc.us/planning/udodoc/Acrobats/Article%2014.pdf</td><td>Uses "Zoning District Tiers:" zoning districts are grouped into Urban, Suburban, or Rural; different LOS standards for each. Note that the LOS for Urban districts is either E or "n/a."
<table>
<tr><th colspan="4">Table 14-1: ZONING DISTRICT TIER</th></tr>
<tr><th></th><th>Rural</th><th>Suburban</th><th>Urban</th></tr>
<tr><td>Freeway/Expressway</td><td>C</td><td>D</td><td>n/a</td></tr>
<tr><td>Major thoroughfare</td><td>C</td><td>D</td><td>n/a</td></tr>
<tr><td>Minor thoroughfare</td><td>C</td><td>D</td><td>E</td></tr>
<tr><td>Minor arterial</td><td>C</td><td>D</td><td>E</td></tr>
<tr><td>Major collectors</td><td>C</td><td>D</td><td>E</td></tr>
<tr><td>Minor collector</td><td>B</td><td>D</td><td>E</td></tr>
<tr><td>Local roads</td><td>B</td><td>C</td><td>E</td></tr>
<tr><td>Local streets</td><td>B</td><td>C</td><td>E</td></tr>
</table></td></tr>
<tr><td>Washington County, MD</td><td></td><td>Roads must be adequate to support existing and projected traffic, or be programmed within 2 years. Exemption: up to 4 agricultural lots may be created, or an agricultural lot for a family member, on a road of at least 16' wide.</td></tr>
</table>

Location	Source	Standard
Montgomery County, MD		**Intersections** Critical Lane Volume (CLV); Exemptions: child day care; up to 300 units of affordable housing. CLV limits are established on a policy area basis, and range from 1,450 in rural areas to 1,800 in CBDs and Metro Station Policy areas. Policy Area Standards: Derwood, No. Potomac, Potomac: 1,525; Aspen Hill: 1,550; No. Bethesda: 1,600. **Road Links** Road segment capacity (vehicles/hr/lane): 1800-2100 freeway 1400-1800 major hwy 1100-1500 arterial 800-1200 primary **Areawide Level of Service** C; LOS limit for freeways is D/E.
Harford County, MD		**Intersections** LOS "D" within county growth envelope; LOS "C" outside envelope. **Road Links** Traffic Impact Analysis (TIA) required for developments that generate 250 or more trips per day; study area within 2 miles; area expanded if more than 1,500 trips/day are generated. Developer must provide mitigation to achieve required LOS, or provide 125% of the cost of mitigation to an escrow fund. Exemptions: projects within the Rte. 40 CRD area do not have to do TIA unless they generate more than 1,500 trips per day. **Areawide Level of Service** LOS "D" within county growth envelope; LOS "C" outside envelope.

<table>
<tr><th>Location</th><th>Source</th><th>Standard</th></tr>
<tr><td>Frederick County, MD</td><td></td><td>Road Links:
Lane Use Factors:<table><tr><th>Approach Lanes</th><th>LUF</th></tr><tr><td>1</td><td>1.00</td></tr><tr><td>2</td><td>.55 thru
.60 turn</td></tr><tr><td>3</td><td>.40 thru
.45 turn</td></tr><tr><td>4 or more</td><td>.3</td></tr></table>Exemptions: all primary and interstate highways are exempt. Less than 100 peak hour trips; up to 5 trips is di minimis; passby/intercept trips for nonresidential may be counted for roads where volume is 10,000 ADT or greater.
Areawide Level of Service
Ag./rural areas: "C"; Other areas: "D"</td></tr>
<tr><td>Baltimore County, MD</td><td></td><td>Intersections
Ag./rural areas: "C"; Other areas: "D". LOS standards for non-industrial development, based on area of county.</td></tr>
<tr><td>Anne Arundel County, MD</td><td></td><td>Road links
LOS "D" with projected traffic and an adequacy rating of not less than 70 as defined in the county road rating program, or found by the county to be adequate; or 30% funding of need road projects or provision of improvements by developer. Determined at submission of sketch plan stage.
Exemptions: Developer demonstrates that traffic volume is primarily due to regional development, and provides improvements or mitigation that more than offset his development. Does not apply to family conveyance subdivisions, or subdivisions of up to 10 lots in the agricultural area; does not apply to minor subdivisions up to 3 lots.</td></tr>
<tr><td>Wicomico County, MD</td><td>Proposed ordinance: http://www.co.wicomico.md.us/Wicomicoinfo/propadequatepubfac.pdf3</td><td>Uses the "Critical Lane Method" to determine adequacy. Takes into account number of approach lanes to intersections; critical lane volume (11 different LOS levels: A, A/B, C, C/D, etc.), and various other factors. Minimum LOS for rural roads: C; all others: D; signalized intersections: D, using HCM (Highway Capacity Manual) approach.</td></tr>
</table>

Location	Source	Standard
Calvert County, MD	http://www.co.cal.md.us/planning/compplan/start.htm	Requires LOS "C" for roads and intersections; LOS "D" is permitted in town centers. A level service of "D" is maintained on MD 2/4 and on Town Center Roads A level service of "C" is maintained on County Roads and outside Town Centers Map of town centers: 
Cary, NC	http://www.townofcary.org/depts/dsdept/roadsapf.htm	Five transportation zones (central, north, northwest, etc.) are established, each with different LOS standards. Some of the zones are targeted development areas; some areas focus on minimizing development. LOS standards are established accordingly. Some areas even allow LOS "F" at specific intersections/streets.
Miami-Dade County, FL	http://www.co.miami-dade.fl.us/planzone/Library/concurrencyQA.pdf	LOS Standards for Traffic Circulation (roadways): • Inside the Urban Infill Area (UIA) Level of Service Standard (LOS) E; where 20 minute mass transit headway within 1/2 mile, 120% of LOS E; and where extraordinary mass transit service, 150% of LOS E. • Between the UIA and Urban Development Boundary (UDB) LOS D; where 20 minute mass transit headway within 1/2 mile, LOS E; and where extraordinary mass transit service 120% of LOS E.3 • Outside UDB LOS D on State Minor Arterial Roads and LOS C on County Roads, State Freeways and Principal Arterials.

References/Examples: Other Transportation Systems

Location	Standard
Montgomery County, MD	• **Transit Service** Mode share and RTA index • **Bike Facilities** Mode Choice; based on TRAVEL/2 model • **Pedestrian Facilities** Mode Choice; based on TRAVEL/2 model LOS "D" with projected traffic and an adequacy rating of not less than 70 as defined in the county road rating program, or found by the county to be adequate; or 30% funding of need road projects or provision of improvements by developer. Determined at submission of sketch plan stage.

Schools

Current Regulations

There do not appear to be any City regulations that explicitly deal with the relationship between new development and the adequacy of school facilities. One of the approval criteria for a subdivision in Rockville is, "A preliminary plan shall be approved if the Planning Commission finds that the proposed subdivision will not: ... overburden existing public services, including but not limited to water, sanitary sewer, public roads, storm drainage and other public improvements." Rockville Code Sec. 25-727(e). This language is repeated a number of times in the Code, applying to different development types and procedures (see discussion at page 16), but there is no reference to schools. The APF ordinance should specifically list all facilities for which a regulatory performance review will be made. .

Adopted Policies Related to Adequacy and LOS

In Development Regulations

None.

Other

The Montgomery County Public Schools has established a method of determining school capacity that it applies and reports as part of its annual Capital Budget Program (MCPS 2002, App. H). In general, the school system uses a planning capacity of 25 students per section for most K-12 students, with classrooms for special programs considered adequate at capacities ranging from 10 (Special Education Program) to 44 (1/2-day Kindergarten) (see MCPS 2002, App. H, p. H-1), which provides an objective basis for determining building capacity.

Montgomery County, like several other Maryland jurisdictions, determines capacity of a "cluster" of schools.

Montgomery County currently considers that there is available capacity if the cluster of schools is at 100 percent or less of actual physical capacity; Annual Growth Policies before 2003 had used a 110 percent figure.

Recommendations

Level of Service

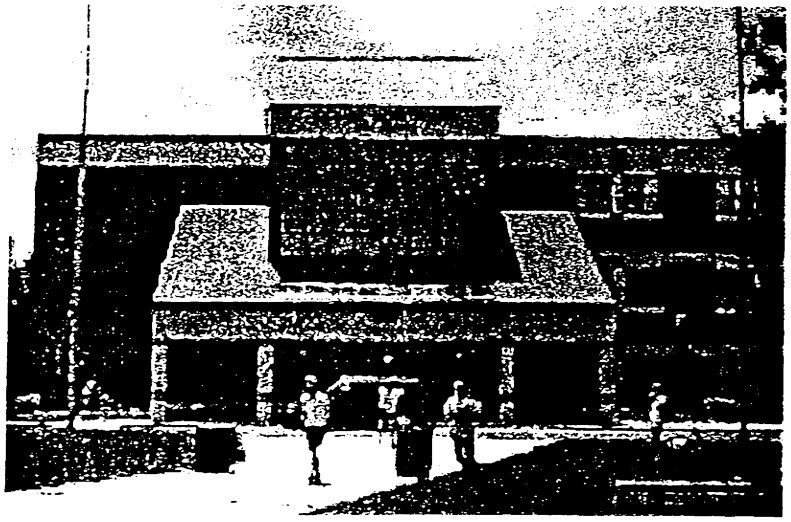
An Adequate Public Facilities ordinance for schools should be based on the following principles:

- The capacities determined annually by the Superintendent of Montgomery County Public Schools, as reported to the Board of Education, should be used as the capacity basis for the APF program;
- The City should follow the common practice of determining capacity based on a cluster of schools, using the clusters already established by the Montgomery County Public Schools;
- Capacity temporarily taken off-line for rehabilitation and remodeling in accordance with the Montgomery County Public Schools Capital Improvements Program should be considered available;
- Facilities shown on an adopted Capital Improvements Program with identified sources of funding and planned for completion within 5 years or less should be considered available;
- Schools should not be considered over-capacity unless projected demand will cause enrollment in a cluster to exceed 100% of the MCPS calculated capacity of the buildings in the cluster;
- Demand should be based on actual student census in the most recent complete academic year, adjusted for the following: demographic changes, changes in district boundaries and other changes anticipated by planners with Montgomery County Public Schools; additional demand from approved development; additional demand from the specific development being considered for approval. It may be necessary to require that developers obtain current certification of school capacities for individual clusters, because the annual figures reported to the Board of Education can rapidly be outdated; and
- SEE REMAINING ISSUES.

Note that school clusters in Rockville draw some of their enrollment from outside the City. Thus, for schools, the tracking system for enrollment – both from dwelling units built since the last annual MCPS capacity report and from pipeline projects – must be coordinated with the MCPS administration and National Capital Park and Planning Commission to ensure that the accounting includes new demand from outside the City, as well as the demand from within the City.

Regulatory Implementation

Capacities are available from the Montgomery County Public Schools annually and should be made available to prospective developers. It will be necessary to conduct a project-specific review for residential development projects simply to compute the projected demand from each development.



Remaining Issues

The use of modular or temporary classrooms to provide some school space is a matter on which Mayor and Council members have expressed concern.

- These facilities are called "relocatables" by the Montgomery County Public Schools (MCPS 2002, pp. 1-14, 1-15). Council's interest really raises two separate issues. The first part of the issue relates to the determination of capacity of a school cluster; the second part relates to the actual use of relocatables.
- The **use** of a reasonable number of portable classrooms seems to represent effective resource management by the School Board to maintain relatively small class sizes, even when doing so results in increasing the number of sections in a particular school (see discussion at MCPS, p. 1-15, summarized below).
- The County Planning Board does not consider relocatables in determining school capacity (AGP 2003, Policy S-2, page 40); that statement is somewhat deceptive, because the Planning Board appears to determine school capacity based on an assumption of even distribution of students among grades and sections without accounting for the inevitable deviations that generate some of the use of relocatables (see discussion below, under Comments at page 30.
- Given the expense of building schools to meet demand in peak years, the Planning Board's view seems short-sided and potentially expensive. On the other hand, it is clear that when a certain percentage of students in a school are attending class in portable classrooms or when these temporary units are used long-term, there is a capacity problem.

Suggestion: consider a standard specifying that a school cluster is over capacity when either of the following occurs: 25% or more of classroom capacity is provided by temporary buildings in one year; 10% or more of classroom capacity has been provided by temporary buildings for 8 of the last 10 years.

Comments

The proposed methodology is essentially similar to the Montgomery County policy, although somewhat more detailed. It maintains the following principles from the Montgomery County system:

- It relies on the methodology consistently used by the school system to determine building capacity;
- It bases capacity computations on a "cluster" of schools, using clusters already used by Montgomery County Public Schools in their own planning;

The proposed methodology essentially relies on the Board of Education to determine what planned facilities will actually be built and which are just wishes.

The proposed methodology, even if modified to include a policy related to "relocatable" classrooms, does not ensure that every student will have every class in a permanent classroom with 25 or fewer students in it. For programmatic reasons, Montgomery County Public Schools sometimes use relocatables at a school where enrollment is within its computed capacity. Capacities are based on an optimal/maximum section size of 25 students; if no section is allowed to exceed 25 students, it is statistically probable that some will have fewer than 25 and that some will go over 25 and thus have to be split. Thus, a school with 500 students may need 21 or 22 sections to handle those students, although the school has a permanent capacity for 500 students (see MCPS 2002, p. H-1).

School planners, like highway planners, have learned that it is very expensive to build for the peak demand period. A school building that may last 100 years is likely to experience a peak demand period of 10 to 15 years. Unless Montgomery County taxpayers express a willingness to build what will amount to excess capacity for most of a school's life to ensure that each school will always have "adequate" capacity, this compromise appears to be a reasonable one and one that is entirely consistent with the approach taken by the Montgomery County Public Schools.

References/Examples

Location	Source	Standard
Town of Cary, NC	http://www.townofcary.org/schoolapf.htm http://www.townofcary.org/depts/dsdept/schoolapf.htm [complete text]	**Ordinance Description** The following is a summary description of the essential features and mechanics of Cary's Adequate Public Facilities Ordinance for Schools. *What Projects Are Affected By This Ordinance?* This ordinance is not retroactive; it applies only to new residential projects submitted to the Town after July 22, 1999. Such subdivision or site plan projects include those within planned unit developments unless an exception is obtained from Town Council. This exception is spelled out in the ordinance. These provisions also affect previously approved plans that have expired due to lack of construction activity. *When Is Schools Adequacy Tested?* This ordinance establishes the schools adequacy test at the time of

Location	Source	Standard
		subdivision plan or site plan review. Unlike the transportation APF, this ordinance tests for adequacy at the development plan stage – when residential subdivision plans or site plans are submitted to the Town and more detailed information about the project is known. Other amendments to the Unified Development Ordinance were made, however, which require a general assessment of schools adequacy when rezonings and planned unit developments are evaluated. *Who Issues Adequacy Certificates?* Rather than the Town of Cary making the determination whether schools that will serve a proposed residential development will be adequate, the ordinance requires issuance of a Certificate of Adequate Educational Facilities (CAEF) by the Wake County Board of Education. Hence, prior to submittal of a plan to the Town, the developer will be required to submit information about the project to the school system staff. An approved CAEF must then accompany the application for development plan review. *What Adequacy Standards Does A Developer Have To Meet?* The Wake County Public School System studied its long-range capital facilities program and provided the measures of adequacy that will be applied to new residential development proposals. Based upon that analysis, two different level of service standards will be utilized. For the next three years, the permissible amount of overcrowding will be an *average* of all schools of a particular level (elementary, middle, and high) that serve the Cary area. Adopted standards for 1999, 2000, and 2001 are set at 148% for elementary schools, 132% for middle schools, and 141% for high schools. Subsequently, the adequacy requirement becomes more rigorous, and is applied to each *individual* school. Beginning in 2002, no school, regardless of level, will be allowed to exceed 130% of permanent seat capacity. *Do Adequacy Certificates Expire?* Landowners may apply for an adequacy certificate in advance. They must, however, submit a subdivision plan or site plan to the Town within six months of the date of the CAEF and must receive Town approval of the project within twelve months of issuance by the schools system. *Are There Any Exceptions To the Schools Adequacy Ordinance?* Yes, low-impact projects not expected to generate a significant number of students are completely exempt from the requirements of this ordinance. These include low-density subdivisions

Location	Source	Standard
		where the average lot size is two acres or greater and other projects, like individual duplexes, which do not require plan approval. Additionally, certain affordable housing projects that use public subsidies or include other arrangements that will ensure affordability may be allowed an increase in the overcrowding standard, but not more than 5% above the established adequacy standards. Finally, amendments to plans which were approved before ordinance enactment that do not increase the number of units by more than 5% are also not subject to this ordinance. *Are There Any Other Exceptions?* The last section of the schools adequate public facilities ordinance provides for an exemption for new subdivision or site plans within planned unit developments (PUD's) that were approved prior to this ordinance. This exception must be given by Town Council and is only valid for three years or less after it is granted by Council. Council must make certain findings that the applicant has made substantial expenditures or commitments that would be adversely affected if the developer were made to comply with the ordinance.
Concord, NC	UDO chapter: http://www.ci.concord.nc.us/planning/udodoc/Acrobats/Article%2014.pdf	Calculates current available capacity using "student generation rates:" the projected number of students to be generated by a proposed dwelling. If current capacity – (current enrollment + students generated) is less than zero [a second formula takes into consideration facilities planned in the next ten years], the funding/phasing requirements kick in.
Palm Beach County, FL	http://www.co.palm-beach.fl.us/PZB/new/zoning/ctf/ordinances/genissues3.pdf http://www.co.palm-beach.fl.us/pzb/uldc/content/article11.pdf	110% capacity in a CSA (Concurrency Service Areas); 120% capacity for individual schools. Must consider facilities to be opened or under construction in next 3 years. Must consider adjacent CSA capacity.
Washington County, MD	http://www.wc-link.org/washco/adqpub.pdf	The test is whether a school has the capacity to accommodate student enrollment without exceeding 105% of board of education's capacity rating for that school. Exemptions include elderly/retirement housing; development within designated Urban Growth or Town Growth areas; a lot transferred to a member of the family, which must remain in the family for 10 years.
Wicomico County, MD	http://www.co.wicomico.md.us/Wicomicoinfo/propadequatepubfac.PDF	Pupils generated by the proposed development + current enrollment >105% state rated capacity (elementary) or >110% state rated capacity (secondary)
Montgomery County, MD		100 % of capacity within 4 years for each cluster. MCPB may approve a subdivision in a cluster that is inadequate

Location	Source	Standard
		that is partly or wholly within the city unless the city restricts approval due to inadequate school capacity.
Harford County, MD		Elementary, 120% of rated capacity within 2 years; Secondary, 120% of rated capacity within 3 years. Exemptions: transient housing, elderly housing/retirement communities.
Frederick County, MD		Elementary, 105% of capacity; Secondary: 110% of capacity; adequate capacity must be available within 2 years. Exemptions: provide a development phasing plan; capacity not to exceed 115% for elementary school and 120% for secondary school, and school construction is contained in 6-year CIP.
Baltimore County, MD		115% of rated capacity. Exemptions: redevelopment that does not increase unit count; funded school construction; realignment of districts or programs.
Anne Arundel County, MD		Not to exceed the State Interagency Committee capacity guidelines, or if approved by the County Board of Education.
Snohomish County, WA	http://www.co.snohomish.wa.us/ pds/900-Planning/CFP/Complete%20Statementofassessment.pdf	The level-of-service (LOS) standards for public schools are established in each school district's CFP. In addition to building construction, these standards often address such things as maximum class size, optimum school capacity, and the use of portable classrooms. Some items are set by the state and are fairly uniform across the state. Others are subject to local discretion and may vary widely from district to district. **Examples of School District LOS Standards** **Monroe School District** • Educational Program Standards For Elementary Schools • Class size for grades K-4 should not exceed 24 students. • Special Education for students will be provided in a self-contained classroom or in a separate classroom. • All students will be provided music instruction in a separate classroom. • All students will have scheduled time in a computer lab. • Optimum design capacity for new elementary schools is 500 students. However, actual capacity of individual schools may vary depending on the educational programs offered. **Educational Program Standards For Middle, Junior and High Schools** • Class size for middle school grades should not exceed 28 students. • Class size for junior high school grades should not exceed 28 students.

Location	Source	Standard
		• Class size for high school grades should not exceed 28 students. • As a result of scheduling conflicts for student programs, the need for specialized rooms for certain programs, and the need for teachers to have a work space during planning periods, it is not possible to achieve 100% utilization of all regular teaching stations throughout the day. • Special Education for students will be provided in a self-contained classroom. • Identified students will also be provided other nontraditional educational opportunities in classrooms designated as follows: Resource Rooms (i.e. computer labs, study rooms); Special Education Classrooms; and Program Specific Classrooms (i.e. music, drama, art, family and consumer science, physical education, technology education). • Desired design capacity for new middle and junior high schools is 750 students. However, actual capacity of individual schools may vary depending on the educational programs offered. • Desired design capacity for new high schools is 1,400 students. However, actual capacity of individual schools may vary depending on the educational programs offered. **Minimum Educational Service Standards** • The Monroe School District will evaluate student housing levels based on the District as a whole system and not on a school by school or site by site basis. This may result in portable classrooms being used as interim housing, frequent attendance boundary changes or other program changes to balance student housing across the system as a whole. • The Monroe School District has set minimum educational service standards based on several criteria. Exceeding these minimum standards will trigger significant changes in program delivery. If there are 28 or more students per classroom in a majority of K-4 classrooms, or 34 or more students in a majority of 5-12 classrooms, the minimum standards have not been met. • Although they may meet the number criteria above, double shifting with reduced hours or "Year Round Education" programs adopted for housing reasons would also not meet the minimums. • It should be noted that the minimum educational standard is just that, a minimum, and not the desired or accepted operating standard.

Location	Source	Standard
		<u>Granite Falls School District</u> **Educational Program Standards for Elementary Schools** • Class size for grades K-4 should not exceed 22 students and 5th grade should not exceed 27 students. • Special Services for students may be provided in a self-contained classroom (including speech and physical therapy). • All students will be provided music instruction in a separate classroom. • All students will have scheduled time in a computer lab. • Optimum design capacity for new elementary schools is 600 students. However, actual capacity of individual schools may vary depending on the educational programs offered. **Educational Program Standards for Middle and High Schools** • Class size for middle and high school grades should not exceed 27 students. • As a result of scheduling conflicts for student programs (the need for • specialized rooms for certain programs, and the need for teachers to have a work space during planning periods) it is not possible to achieve 100% utilization of all regular teaching stations throughout the day. Therefore, classroom capacity should be adjusted using a utilization factor of 80% to reflect the use of one-period per day for teacher planning. • Special Services for students may be provided in a self-contained classroom. • Identified students will also be provided other nontraditional educational opportunities in classrooms designated as follows: o Resource Rooms (i.e. computer labs, study rooms) o Special Services Classrooms o Program Specific Classrooms (i.e. music, drama, art, home economics, and physical education). • Optimum design capacity for new middle schools is 600 students. However, actual capacity of individual schools may vary depending on the educational programs offered. • Optimum design capacity for new high schools is 800 students. However, actual capacity of individual schools may vary depending on the educational

Location	Source	Standard
		programs offered. **<u>Everett School District</u>** **Educational Program Standards for Elementary Schools** • Class Size Targets are: 22 Kindergarten 24 Regular education Grades 1-5 15 Developmental Kindergarten 10 Special Education – Emotionally/Behaviorally Delayed 15 Special Education – Self Contained 10 Special Education – Life Skills • Students are provided music instruction in a separate classroom • Students are scheduled into the computer lab • All elementary schools should strive to offer at least one All Day Kindergarten class as part of their curriculum • Optimum design capacity for new elementary schools is 530 students (FTE). However, actual capacity of individual schools may vary depending on the educational programs offered or housed at a particular school. **Educational Program Standards for Middle and High Schools** As a result of scheduling conflicts for student programs, the need for specialized rooms for specific programs, and the need for teachers to have a workspace during planning periods, it is not possible to achieve 100% utilization of teaching stations. Based on an analysis of actual utilization of secondary schools, the standard utilization rate is 85%, resulting in the following target class sizes. • Class size targets: 24.3 Middle School Regular Education 24.3 Middle School Special Education Resource 15 Middle School Special Education Self Contained 24 High School Regular Education 24 High School Special Education Resource 15 High School Special Education Self Contained 24 Alternative High School • Students will also be provided educational opportunities in classrooms such as: